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vided with ostia and is placed in a pericardial sinus, but the ostia in *Peripatus* can be explained by the disappearance of the transverse vessels, while the pericardium is merely a blood sinus, the result of the atrophy of true circulatory tubes, these having degenerated as a consequence of the development of tracheæ. In regard to tracheæ, Boas points out that tracheæ of different kinds can exist, and that it has yet to be proved that those of *Peripatus* and those of the "Tracheata" are homologous; with the bulk of the evidence against the view. It is further emphasized that if *Peripatus* be a stem form for the "Tracheates," then, of necessity, the Arthropoda must form a polyphyletic group—in other words, the Arthropoda must go, for we cannot conceive how the Crustacea could have descended from insectan or myriapod ancestors. In this connection, see this journal, Vol. XXVIII, p. 230, 1894, and *Natural Science*, Vol. X, pp. 97 ff., 1897.

**New York Amphibia.**<sup>1</sup>—The Linnæan Society of New York has been issuing a series of bulletins on the local fauna of the surroundings of New York City. This work is one strongly to be commended. The *Naturalist* believes thoroughly in the importance of the study of local faunas. The present list describes 11 species: 1 *Bufo*, 1 *Scaphiopus*, 4 *Hyladæ*, and 5 *Rana*. Statements are also made concerning distribution, habitat, note, and egg-laying habits. The pamphlet will be valuable to teachers of zoölogy, as well as to investigators.

**Adaptive Modifications in Respiratory Organs** of the water-inhabiting mammals, especially the cetaceans, in response to their changed environment, have been investigated by O. Müller.<sup>2</sup> In most pronounced cases the trunk of the animal assumes the form of a spindle to accelerate movement through the water. The thorax is somewhat flattened dorso-ventrally, and the lungs, in which the lobes have been lost by fusion, are more extensively developed dorsally than ventrally. This is especially well seen in the bronchial branches, which, instead of being exclusively ventral, are often dorsal. The thoracic muscles are strong. The trachea is provided with complete cartilage rings instead of incomplete ones, as in most mammals, and the shortening

<sup>1</sup> Sherwood, W. L. The Frogs and Toads Found in the Vicinity of New York City, *Proc. Linn. Soc., New York*, No. 10, 27 pp., 1898.

<sup>2</sup> Müller, O. Untersuchungen über die Veränderungen, welche die Respirationsorgane der Säugetiere durch die Anpassung an das Leben im Wasser erlitten haben, *Jena. Zeitschr.*, Bd. xxxii, pp. 95-230, Taf. iii-vi, 1898.

of the neck often induces a fusion of ring with ring. The cartilage support for the bronchial tubes may be in the form of a spiral band, traceable well into the substance of the lung. Most of these adaptations are obviously means for resisting the enormous pressure of the water on the gas-filled cavities of the lungs, etc.

G. H. P.

**Reptiles of North America.** — Under the title of *Contributions to North American Herpetology*, Mr. Robert Baird McLain, of Wheeling, W. Va., has published privately three memoirs on the collections of reptiles in the Museum of Stanford University. They are entitled "Contributions to Neo-tropical Herpetology," "Notes on a Collection of Reptiles made by C. J. Pierson at Fort Smith, Kansas," and "Critical Notes on a Collection of Reptiles from the Western Coast of the United States." All bear the date of February, 1899.

These papers are full of misprints; the form of statement is often crude, and the references to other authors, as Professor Cope and Dr. Van Denburgh, are characterized by the sweeping severity which extreme youth frequently displays towards the masters.

It might fairly be inferred from the nature of their contents that these papers had received the criticism and approval of the instructors of Stanford University. It is well to state, therefore, that they represent merely the laboratory notes of an undergraduate student who had free access to the museum shelves. That publication of these notes was contemplated was not learned until after Mr. McLain had left the institution, and their appearance in print is contrary to the advice of the officers of the museum, and despite their protest. One new species *Thamnophis steinegeri* (misprinted *rteinegeri*) is described and well figured. As the material has not yet been critically studied, the value of the species is yet to be determined.

D. S. J.

**Zoölogical Notes.** — Dr. Oscar Loew, who has recently been called to the Department of Agriculture at Washington, has just published at Munich a timely and valuable book of some 175 pages, entitled *Die chemische Energie der lebenden Zellen*.

"Movement of the Nervous Elements" (*Act. Soc. Scient. Chili*, Tome VIII, pp. 71-76) is the title of a critical review by Daniel Monfallet, of the more recently discovered facts and their bearings on the theories of Rabl-Ruckhard, Tanzi, and Ramon y Cajal, as to